SCOTTSDALE ROAD CORRIDOR DRAINAGE MASTER PLAN

JUNE 2002

STUDY PURPOSE

The Flood Control District of Maricopa County (District) and the City of Scottsdale have formed a partnership to address regional drainage and flooding issues along the Scottsdale Road Corridor. The Town of Paradise Valley and the City of Phoenix are also participating stakeholders.

The Scottsdale Road Corridor Drainage Master Plan (CDMP) addresses the major drainage facilities that benefit and/or impact large areas of land, such as the Scottsdale Road drainage corridor, the 71st Channel, and the upper reaches of the Berneil Ditch. The existing regional drainage system has weak links, which cannot convey as much flow as the facilities above and below them. Smaller and more localized drainage problems are usually addressed by municipal capital improvement projects without assistance from the District.

After an extensive public involvement process, the study team has identified a Recommended Drainage Alternative that should provide the area with a continuous drainage system and regional protection from a 10-year storm. A 10-year storm has a 10 percent chance of occurring each year. In the event of a 10-year storm, all the stormwater remains within the regional drainage system. However, breakouts and flooding will still occur during larger storms.

STUDY PROGRESS

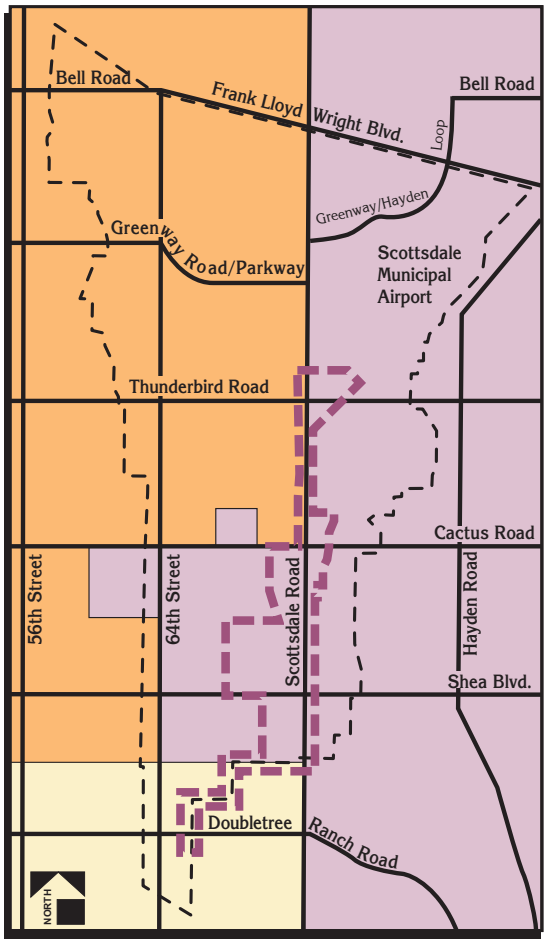
The study team held the first of three public involvement meetings in May 2001 to introduce the study to the public and gather any questions and concerns the community had regarding flood control. The team then completed data collection and existing condition analyses for the study .

In September 2001, the team held an all-day "brainstorming" meeting with the project stakeholders in order to formulate alternative solutions. All of the potential preliminary alternatives generated were evaluated based on a range of criteria, such as the construction cost, potential impacts to the community, and the opportunities that may be created from their implementation.

Those preliminary alternatives that did not meet the majority of the evaluation criteria were eliminated from further consideration. The remaining preliminary alternatives were presented at the second public meeting in March 2002.

The Recommended Drainage Alternative, which was selected based on public and stakeholder input, is summarized on the following pages. It represents a modified version of the preliminary 10-year "Orange" Alternative.

STUDY AREA



KEY

Focus Area

Study Area

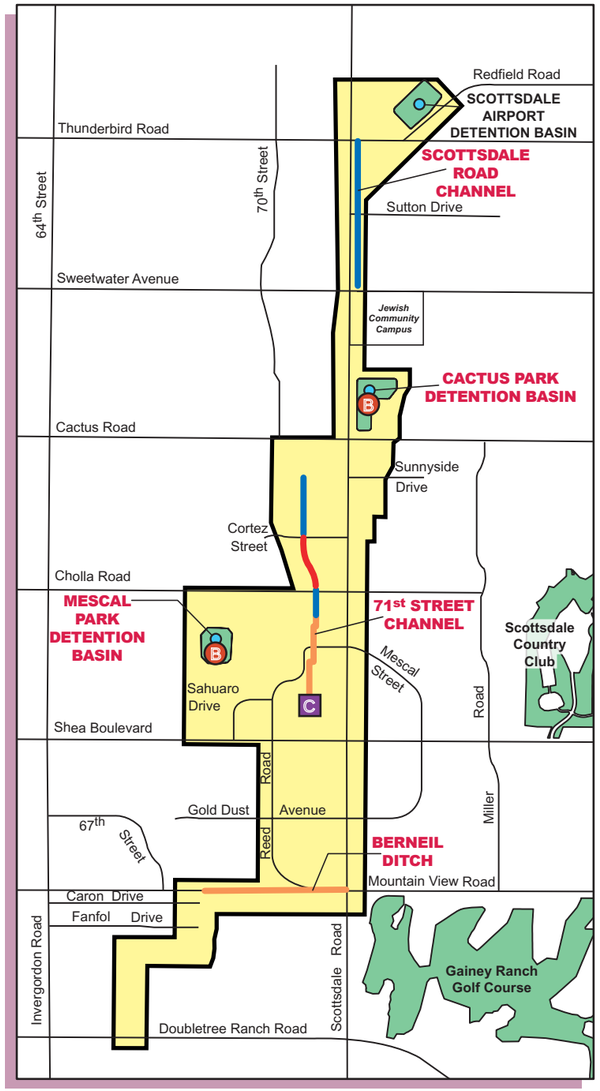
Scottsdale

Phoenix

Paradise Valley

City of Phoenix

RECOMMENDED DRAINAGE ALTERNATIVE (10-YEAR REGIONAL PROTECTION)



KEY

- *Focus Area*
- *Parks/Recreation*
- *Proposed Pipe/Box*
- *Proposed Box & Channel*
- *Proposed Channel Improvement*
- *Proposed Culvert Improvement*
- *Proposed Basin Improvement*

DESCRIPTION

1. Scottsdale Road Channel

- Extends the existing large-diameter storm drain pipe north from Sweetwater Avenue to Thunderbird Road, replacing the existing surface channel and the culvert at Sutton Drive and providing a 10-year capacity.
- Constructs a shallow landscaped channel over the extended storm drain pipe to carry local stormwater.
- Constructs additional storm drain catch basins in Scottsdale Road from Thunderbird Road to Sweetwater Avenue to drain stormwater from the road into the new storm drain pipe.

2. Cactus Park Detention Basin

- Raises the overflow spillway along Cactus Road approximately two feet to provide additional storage volume and prevent the overflow from a 100-year storm.

3. 71st Street Channel

- Constructs an underground storm drain from just north of Sunnyside Drive to a point about 600 feet south of Cholla Road.
- Replaces the existing surface channel from Sunnyside Drive to Cortez Street with a slightly deeper hard-surfaced channel to convey local stormwater. 71st Street from Cortez Street to Cholla Road and the existing 71st Street Channel for a distance of about 600 feet south of Cholla Road will remain essentially unchanged. The combined surface conveyance and storm drain will have a 10-year flow capacity.
- Replaces the existing surface channel from just south of Mescal Street to Sahuaro Drive with a slightly deeper hard-surfaced channel to increase its capacity .
- Improves the capacity of the existing culvert at Sahuaro Drive by adding or reconstructing existing culvert barrels.

4. Mescal Park Detention Basin

- Enlarges the size of the existing basin to increase the stormwater storage volume and prevent the overflow from a 100-year storm.
- Reconstructs the emergency overflow spillway to eliminate the existing potentially hazardous overflow condition.

5. Berneil Ditch

- Reconstructs the existing earth channel from Scottsdale Road west to the southwest corner of Chaparral High School to provide greater capacity. The new channel would be about one foot deeper and have a hardened surface with a uniform bottom and sides. The existing dirt road along the south side of the channel would essentially remain as-is and there would be no modifications to the channel south of Chaparral High School.
- Constructs a floodwall about one foot in height along the south bank of the Berneil Ditch opposite where the 71st Street Channel

BENEFITS

- Increases stormwater conveyance where necessary to at least a 10-year capacity, thus providing improved regional flood protection.
- Provides a more complete and continuous regional outfall system and creates a better opportunity for smaller, local storm drain and drainage improvements to be constructed in the future.
- Covers the existing open channel along Scottsdale Road from Thunderbird Road to Sweetwater Avenue and reduces the present motorist and pedestrian safety hazards.
- Provides an opportunity to construct catch basins in Scottsdale Road where presently there are none from Thunderbird Road to Sweetwater Avenue, reduces flooding in Scottsdale Road from Sutton Drive to Sweetwater Avenue, and improves the wet-weather driving safety of Scottsdale Road.
- Provides opportunity for landscape aesthetics and multi-use path enhancements along Scottsdale Road.
- Significantly improves the capacity of the 71st Street Channel from Sunnyside Drive to just south of Cholla Road while essentially containing the structural improvements within the existing drainage corridor.
- Provides an opportunity to improve the aesthetic condition of a portion of the Berneil Ditch.
- Eliminates the potentially hazardous overflow condition at the Cactus and Mescal Park detention basins by improving their capacity to handle up to a 100-year event.

CONSTRAINTS

- This alternative has a significant total cost but it is much less than the cost of the system-wide 100-year alternative.
- This alternative may have some drainage easement and/or temporary construction easement acquisition requirements along the upper 71st Street Channel.
- Construction impacts, while not as severe or extensive as the system-wide 100-year alternative, are still significant along the Berneil Ditch, upper 71st Street Channel, Scottsdale Road, and Cactus and Mescal Parks.
- Construction impacts would temporarily restrict use of the multi-use paths and sidewalks along Scottsdale Road and the Berneil Ditch and at Cactus and Mescal Parks.

PRELIMINARY COST ESTIMATE

- Scottsdale Road Channel from Thunderbird Road to Sweetwater Avenue: $1,300,000 - $1,600,000
- Cactus Park Detention Basin: $100,000 - $125,000
- 71st Street Channel from north of Mescal Street to Sunnyside Drive: $2,000,000 - $2,500,000
- Mescal Park Detention Basin: $175,000 - $225,000
- Berneil Ditch from Scottsdale Road to south of Chaparral High School: $1,300,000 - $1,625,000

TOTAL ESTIMATED COST RANGE: $4,875,000 - $6,075,000

Channel - An open conveyance of surface stormwater having a bottom and sides in a linear configuration. Channels can be natural or man made. Channels can have levees or dikes along their sides to build up their depth. Constructed channels can be plain earth, landscaped, or lined with concrete, stone, or other hard surface to resist erosion and scour.

10-year Level of Protection - Protects against the size of storm that has a 10 percent chance of occurring each year.

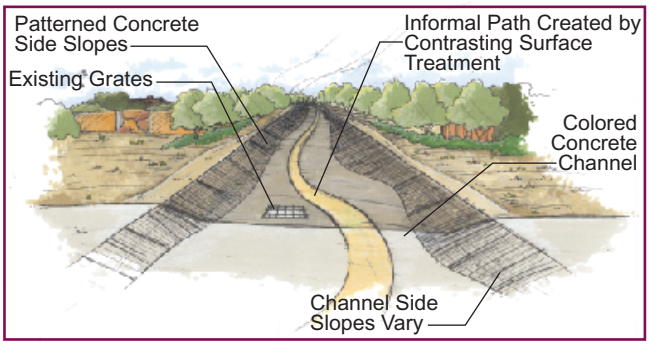
Culvert - A relatively short conduit that conveys surface stormwater through a raised embankment or under a roadway from one side to the other. Culverts can have single or multiple barrels and can consist of concrete, metal or plastic pipe, or reinforced concrete box structures.

Spillway - A grate or mesh, usually metal, located at the primary outlet of a detention basin, at a culvert, or at the entrance to a storm drain that is designed to prevent blockage of the structure by debris.

Storm Drain - A closed underground conduit that conveys stormwater for some distance.

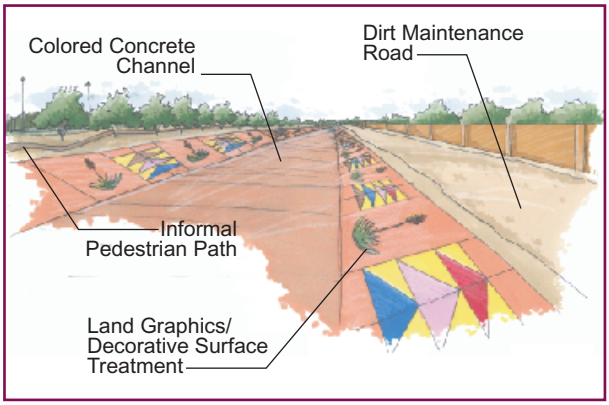
Floodwall - An above-ground man made structure usually situated along the bank of a channel to provide extra conveyance capacity . Floodwalls can be of varying height and length and are usually made of reinforced concrete or masonry block in such a way as to resist the force of the stormwater they are designed to

AESTHETIC TREATMENT

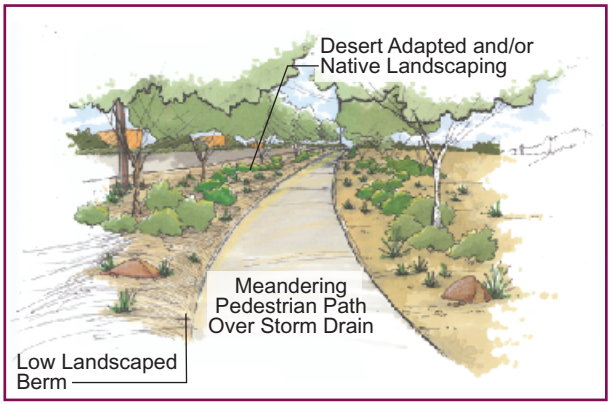


71st Street Channel (north of Cortez Street) Conceptual Channel Sketch

An important part of the development and design of the Recommended Drainage Alternative has been the consideration of the visual impacts and aesthetic opportunities. The recommendations include aesthetic improvements to existing facilities. The illustrations shown here reflect the typical design and treatment of multi-use and aesthetic improvements to the facilities that would help integrate this alternative into the community and surrounding landscape. Design guidelines will be developed as part of the Scottsdale Road CDMP to ensure that these ideas are carried to the next level of development.



Berneil Ditch Conceptual Channel Sketch



Scottsdale Road (north of Sutton Drive) Conceptual Channel Sketch

NEXT STEPS

The Recommended Drainage Alternative will be presented to the Flood Control District Advisory Board, the Flood Control District Board of Directors, the City of Scottsdale City Council, and the Town of Paradise Valley Town Council for their approval. Implementation of the approved drainage alternative will depend on availability of funds and could take between 5-10 years to complete. Comments received from the public on the recommended plan will be considered during the design phase of the project.

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The Flood Control District of Maricopa County has a web site for this project with routinely updated information. Please visit us at: www.scottsdaleroadCDMP.com